

SOME INTERESTING METHODS OF FISHING IN THE BACKWATERS OF TRAVANCORE

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(With two text figures)

The common fishing methods of India have already been described in detail by many authors. Nevertheless, some interesting and novel methods seem to have escaped their attention. A few such interesting methods practised in certain regions along the Travancore coast are described below. These methods are not generally known from other parts of India, but have their parallels in the Malay Archipelago and other Indonesian countries, where they are extensively employed in commercial fishing.

FISHING BY 'LISTENING IN'

In this method, fish are first located by 'listening in' to the sound produced by them. It is well-known that many species of fish, especially

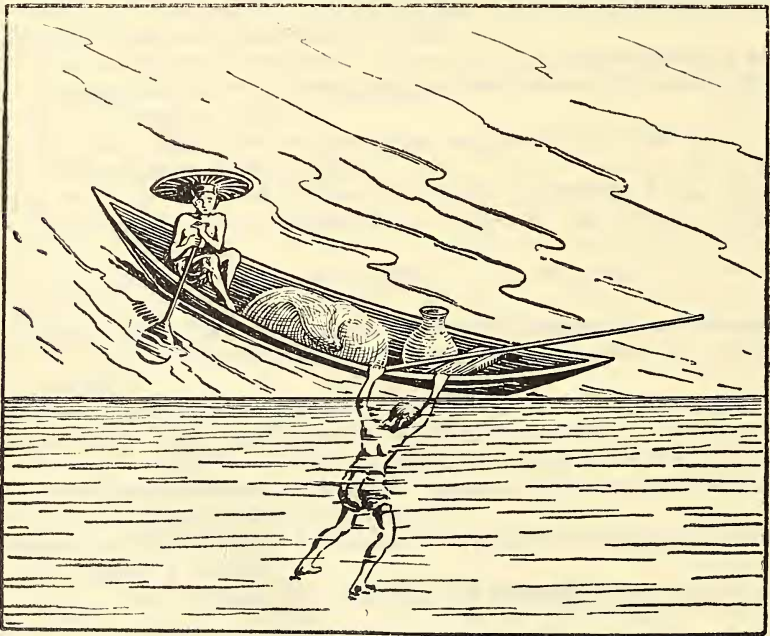


FIG. I. FISHING BY LISTENING IN (*Diagrammatic*)

The fisherman hanging from the gunwale of the boat immerses his head in water to listen for sounds produced by shoals.

those belonging to the families Sciaenidae and Carangidae produce a characteristic sound. The sciaenids are known as drummers since they make a drumming sound which could be heard sometimes even above water, and *Caranx hippos* is said to grunt like a pig. The squeaking perch, *Therapon* spp., and the silver belly *Leiognathus* sp. also produce sound, the former a squeaking and the latter a grating sound. Leather-jacket (*Balistis*) and the porcupine fish (*Diadon*) too are sound producing species.

Usually two fishermen in a canoe take part in this fishing which is carried on in the backwaters of Travancore-Cochin, especially in the Ashtamudi lake at Quilon. Briefly, the method is as follows: The fishermen first row to a secluded part of the lake not much disturbed by wind. The man at the bow, who is the more experienced of the two, gets into the water and holding on to the gunwale of the canoe immerses his head in water and 'listens in' for the sound produced by the fish, while the other man at the helm, usually the former's apprentice, sits balancing the canoe without making the slightest movement (Fig. 1). After locating the direction of the shoal, the fishermen row to the indicated spot and lay their net in a circle. The net employed is a small gill net of $\frac{3}{4}$ " mesh, 100-120 yards long and having floats along the cork line and weights along the ground rope. One end of the cork line is kept afloat by a wooden float and the other end is held in the canoe. After surrounding the shoal, the fishermen begin to tap the sides of the canoe and slowly move in a circle round it gradually making the circle smaller and smaller. Frightened by the tapping noise the fish rush into the net and get entangled in the meshes. The net is then hauled into the canoe and the fish shaken out.

Once a few practical demonstrations were given to the author, and in all instances the prediction of the fishermen as to the type of fish present turned out to be surprisingly accurate. On one occasion the species netted was *Leiognathus*, while on two others it was young *Caranx*. Expert fishermen can distinguish whether a particular shoal is at rest, feeding or moving by the characteristic sound produced during these actions. It is even said that the men can approximately determine the extent of the shoal present.

Fishing by 'listening in' in Lake Inle has been described by Annandale (1922), but in Travancore only fishermen from the villages of Kanjrode and Kallada near Quilon, are adepts in this method, which is however, now dying out.

During a recent visit to the Malay Archipelago to study fishing methods in the Malayan and Siamese seas, the author noted that fishing by 'listening in' was one of the commonest methods followed by the Malays in commercial fishing. This method, locally known as *Payang* fishing is more commonly followed by the east coast Malays, who during the heavy north-east monsoon migrate with their nets and craft to the west coast, where the sea is comparatively calm.

The net called *Payang* is really a Danish seine varying in length from 500 to 600 feet including the wings. It is operated from peculiar looking boats called *Parahu* varying in length from 35 to 45 feet (Firth, 1946). These are shallow boats with full buttocks, straight keel and steep uprising ends, and are fitted with large rectangular sails. A small auxiliary canoe is also used for the use of the fishing leader. The

fishing unit consisting of 18 fishermen including the leader, proceeds to the fishing grounds usually either early in the morning or at dusk. On reaching the grounds the leader rows to a distant spot in a small canoe and listens in for shoals, the procedure being the same as that followed by the Travancore men, viz. holding on to the gunwhale of the canoe and immersing the head in water. After thus locating the shoal the leader issues directions to the fishermen who row to the spot indicated and lay their nets around the shoal. The fishes commonly caught by this method are sciaenids and carangids.

The feasibility of exploiting this method on a scientific basis by using submarine sound detecting instruments like the Asdic was being considered by the Malayan authorities at the time of the author's visit. The Asdic is an ultra-short-wave instrument evolved by the Allied Navy during World War II to detect the presence, direction and probable distance of submarines. It is reported that even whales have been detected by this instrument from the 'mushy' sound they produce. A fishing boat fitted with this instrument can easily spot shoals and shoot its net, thus saving a good deal of time and labour.

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FISHING BY 'VIRALI' OR SCARE LINE

Three or four fishermen usually take part in this method of fishing which is generally carried on in the shallower regions of backwaters, especially Kayamkulam lake. Two persons wade abreast in 4-5 feet depth of water at a distance of about 100 feet from each other and drag between them a long rope on which, at close intervals, are attached yellow coloured tender fronds of the coconut palm, in streamer fashion (Fig. 2). The rope owing to its length sags behind them and

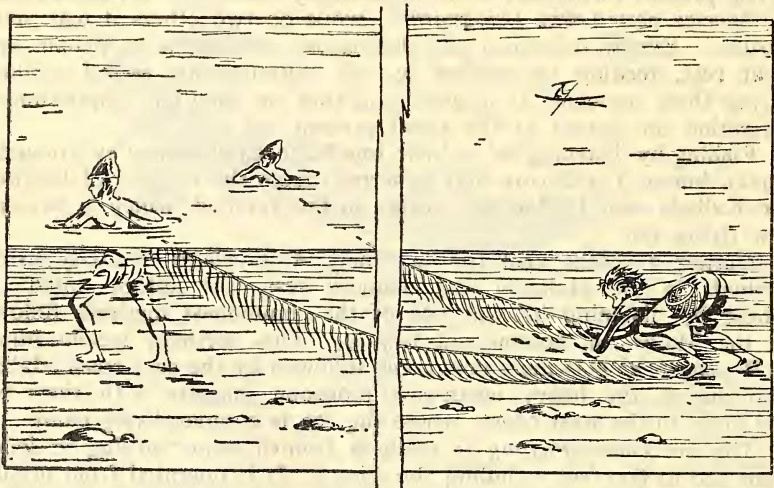


FIG. II. FISHING BY SCARE LINE (*Diagrammatic*)

The scare line being drawn by two fishermen while a third one dives at the apex to grab fish by hand.

roughly takes the shape of a 'V'. At the apex of this V formed by the rope walks a third person, usually an expert diver, with a sort of 'live box' made of palm leaves attached to his waist. Disturbed by the trampling men and probably frightened by the vibrating rope the fish cower and crowd at the apex. At frequent intervals the diver dives down and actually grabs the fish by hand and puts them into the live box. The species commonly caught this way are the Pearl Spot (*Etroplus suratensis*) one of the choicest food fishes of this state, and also species of *Gerres*.

The quantity of fish obtained in a dive depends on the capacity of the diver to remain submerged. Only experts can seize live fish under water. To enable the diver to stay longer in water another man weighs him down by standing on his shoulders. This method of fishing though simple, is highly remunerative.

This method is probably an aberrant form of the *Oikomi* or *Moro Ami* (Le Mare, 1947) of the Japanese fishermen. *Moro Ami* has recently been copied by the Chinese, and during the author's visit to the Malayan waters there were three or four Chinese fishing units operating near some of the small coral islands off Singapore.

One or two motor or sailing boats, four small fishing dinghies and a crew of about 50-60 men participate in this method. The net used is virtually a seine with a bag and two wings, one of which is exceptionally long measuring 150 feet and the other only about 30 feet. The short end of the net is attached to a stone or coral on the shore and the net is laid in a semicircle with the long wing stretched across the tidal current. The fishermen in their dinghies then move towards the mouth of the net formed by the wing and the shore line. About a dozen men get into the water with short ropes on which are attached pieces of cloth in streamer fashion. They slowly move towards the centre of the net, and with these ropes frighten and drive the fish to the cod-end. At the final stage when the cod-end is almost reached the fishermen substitute the ropes with small sticks with which they poke at every crevice and pit on the coral sea bed and drive out the fish. All fish are thus driven to the cod-end of the net which is then hauled into the boat. The fish commonly obtained by this method are species of *Caesio* known as the Coral Bream.

PRAWN JUNKHAR OR 'PACHIL'

This is a peculiar contrivance used in the shallow regions of Kayamkulam and Vembanad lakes. It consists of two long and narrow canoes braced together by cross bars, with their sterns closer and bows wider apart. The canoes lie almost on their sides and face each other. Attached to the bows of the canoes by its two ends is a long chain which drags along the bottom of the lake when the canoes move along. Panikkar (1937) gave a detailed description of this implement but mentioned that a net is tied across the canoes whereas in actual practice only a chain is hung between them.

During calm periods, especially at dusk and dawn, this contrivance is poled along the shallow regions of the lake by a man standing at its narrow end. The chain drags along the bottom and disturbs the prawns and shrimps living close to the bottom. Thus disturbed they jump out of water and fall into the canoes, in which they are trapped

and retained by means of a criss-cross arrangement of bushes or coconut bracts. Only prawns and shrimps are caught by this method, and individual catches during a night amount to many pounds.

The method is exactly similar in principle to the prawn *Seriat* of the Malay Archipelago, Burmah and East Bengal, and also to the *Rua kread* (Swarng Charernphol, 1951) of Thailand. A *Seriat* is a small canoe fitted with a bamboo platform on one side and an upwardly slanting net on the other side. This canoe when rowed along the banks of rivers and canals causes the prawns and shrimps inhabiting the mud slopes to jump. These jumping prawns and shrimps fall into the slanting net and then slide into the canoe from which they are prevented from escaping by covering its longitudinal half with wooden planks.

The author happened to see many modifications of this *Seriat* used in the Malay Archipelago. The commonest modification is a small canoe with a short thin pole sticking out from one side with coconut fronds attached in streamer fashion. When this canoe is rowed along the banks of rivers or near mudflats during low tide the leaves drag along the mud causing the prawns to jump out of water. These jumping prawns are caught in the canoe and trapped by means of small branches and bushes arranged inside.

LURE FISHING

Extensively used in almost all the backwaters of the State, this method makes use of the peculiar habit of fish of gathering round any decaying vegetable mass. A large lure, commonly made up of small branches of trees or bunches of coconut leaves, is lowered into the water and anchored by means of stone weights. This is allowed to decompose in the water for sometime. When the 'lure' has sufficiently matured, fishes gather around and underneath it, probably to feed on the organic detritus formed on the leaves or to seek protection from the sun and enemies.

When the fishermen feel that the lure has fully matured and a sufficient number of fish has gathered, a net, usually a sort of drag net or a small gill net or even a cast net, is shot around the lure. The net is then gradually brought closer to the lure and finally hauled into the canoe with the whole lure inside it. All the fish which had gathered round the lure is thus lifted into the canoe. The fish ordinarily obtained in this are *Etroplus suratensis* and various species of carangid fishes.

Lure fishing is a common method used in the capture of flying fish in the Gulf of Mannar and is also adopted in the commercial fisheries of the Malay Archipelago where the annual landings by this method vary from 50,000 to 60,000 tons (Hardenburg, 1949). This lure is termed *Tuas* by the Malay and *Rumpon* by the Javanese fishermen, and no visitor to these parts could miss such lures distributed all over the Strait of Malacca, China Sea and the Java Seas. There are two types of lures; one in which coconut leaves are tied in bunches and anchored by a weight, and the other in which coconut leaves in bundles are entwined at intervals along a rope and this vertically moored with a weight at the bottom and a float above.

In the Indo-Malayan region two methods are followed in using this lure. In one method, after shooting the net a little distance away from the lure the fishing leader slowly drags the lure towards the net without disturbing the fish. When the lure is brought across to the centre of the net, it is hauled in along with the lure. In the second method a small auxiliary *tuas* is lowered near the original large lure and the former dragged towards the net. Curiously, the fishes leave the original *tuas* and follow the second one towards the net.

Species of *Decapterus*, *Caranx* and *Stromateus* are commonly obtained by this method.

REFERENCES

- Annandale, N. (1922): Fish and Fishing in the Inle lake. *Journ. Bombay Nat. Hist. Society* 28: 1038-1044.
 Firth, R. (1946): Malay Fishermen, their Peasant Economy, London.
 Hardenburg, J. D. F. (1949): Development of Pelagic Fisheries. *IPFC—Proceedings*, Singapore, 1949, pp. 138-143.
 Le Mare, D. W. (1947): Monthly Economic Bulletin issued by special Commissioner in South-East Asia, Singapore.
 Panikkar, N. K. (1937): The prawn industry of the Malabar Coast. *Journ. Bombay Nat. Hist. Society* 39: 343-353.
 Swarn Charernphol (1951): Indigenous Marine Fishing Gears of Thailand. *IPFC—Proceedings*, Cronula, 1950, pp. 99-125.